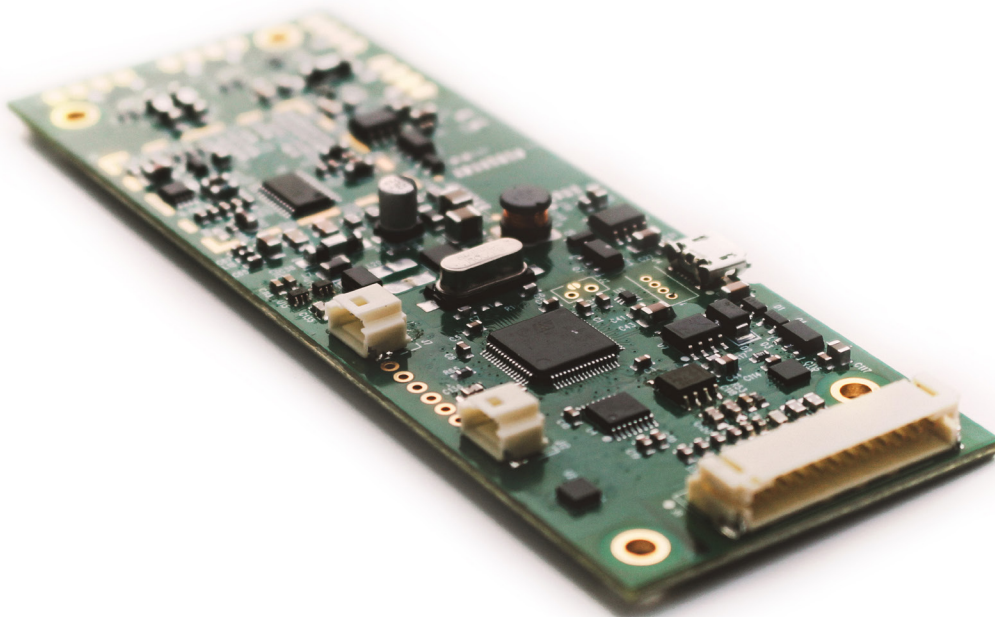


# TR2 electronics module



## product description

The TR2 is a precision scale PCB assembly with integral 24-bit sigma-delta analogue-to-digital converter, accelerometer for tilt detection, and microcontroller with OIML compliant functionality.

Designed for OIML Class III approval as part of a complete scale. Low cost, high precision instrument, designed for use in OIML approved weighing systems.

Communication with the PCB is available using a variety of serial interfaces – CAN bus, RS-232, RS-485, I2C, SPI, UART – making it easy to connect to a PC, PLC or other devices with standard serial ports or CAN network. The inclusion of a USB port (Micro-B) is available for parameter configuration and firmware upgrade.

There are two variants, to cater for different supply voltages: TR2-A (5V) TR2-B (10-24V).

## applications

Medical scales

Retail scales

General weighing equipment

## key features

CAN Interface

RS-232 Serial Interfaces

I2C & UART Serial Interfaces

USB interface for service only

Up to 4x load cells (350Ω or 1,000Ω) summed, up to ±3mV/V; +5V DC excitation

Accelerometer for tilt detection



## specifications

Bridge Excitation	+5V DC
Sensor Configuration	Up to four 4-wire load cells, with parallel summation on the PCB
Accuracy Class	Designed for OIML Class III scales
Verification Scale Intervals	10,000
Minimum Input Sensitivity	0.5 $\mu$ V/d
Weighing range	Single Interval, {Multi-range, Multi-interval}
Resolution	$\pm$ 240,000 (non-approved)
Analogue Input Range	$\pm$ 15mV ( $\pm$ 3mV/V x 5V DC excitation)
Minimum Load-Cell Impedance	75 $\Omega$ (e.g. 4 x 350 $\Omega$ )
Maximum Load-Cell Impedance	1,100 $\Omega$
Programmable Sampling Rate	5 Hz to 50 Hz
Calibration	Test Weight(s)
Digital Filtering	Averaging, FIR, IIR
Weighing Functions	Zero, Gross, Tare, Net, Filter, Zero-tracking, Hold weight, etc.
Programmable parameters	Stability criteria, zero range, initial zero, min/max weight output, gravity compensation, 32-byte user-definable non-volatile memory area
Passcode protection	Calibration and User Data
Tilt detection resolution	10-bit (0.06° up to 30° tilt)

### CAN bus interface (CAN 2.0B)

Baud-rate	500 kbps (adjustable)
Frame Format	29 bit

### RS-232 interfaces

Protocol	Simple, text-based command set
Baud-rate	115,200bps
Format	Master/slave. 8 data bits, 1 stop bit, no parity

### RS-485 interface

Protocol	Simple, text-based command set
Baud-rate	115,200bps
Format	Master/slave. 8 data bits, 1 stop bit, no parity

### UART interface

Protocol	Simple, text-based command set
Baud-rate	115,200bps
Format	Master/slave. 8 data bits, 1 stop bit, no parity

### I2C (slave) interface

Protocol	ASCII Characters
Baud-rate	Defined by master (e.g. 20kHz)

### SPI interface

Hardware is included. Firmware available on request.

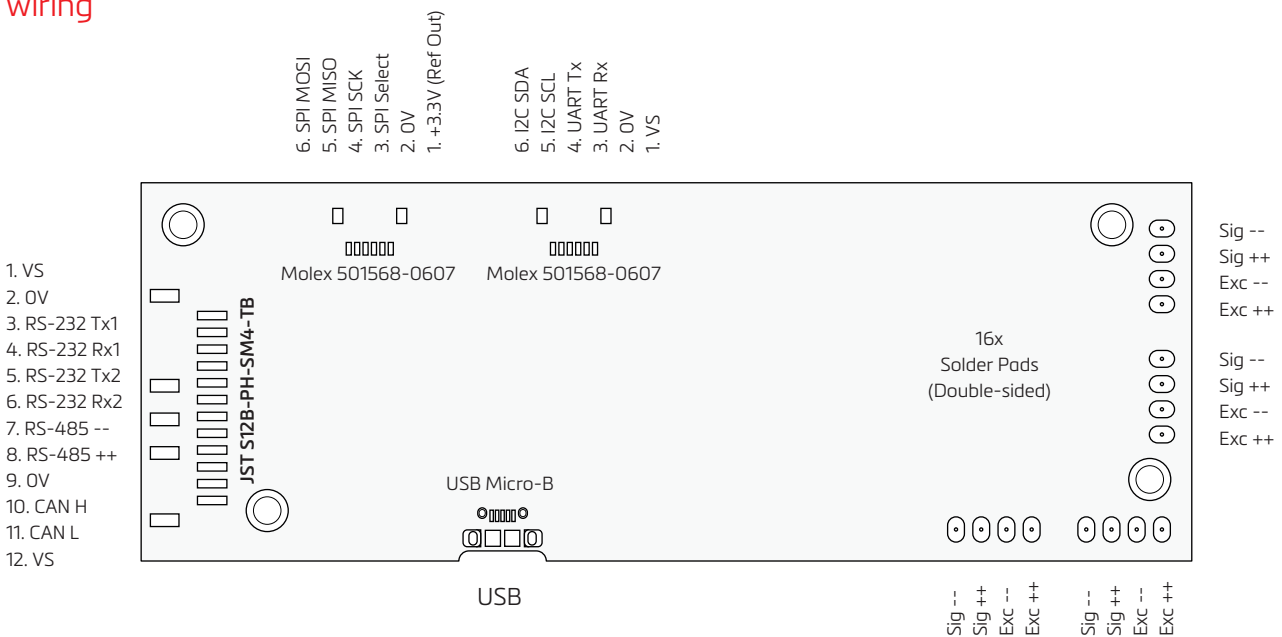
### USB (Service) interface

Class	USB CDC (Configuration and Setup only)
Baud-rate	Auto-detected

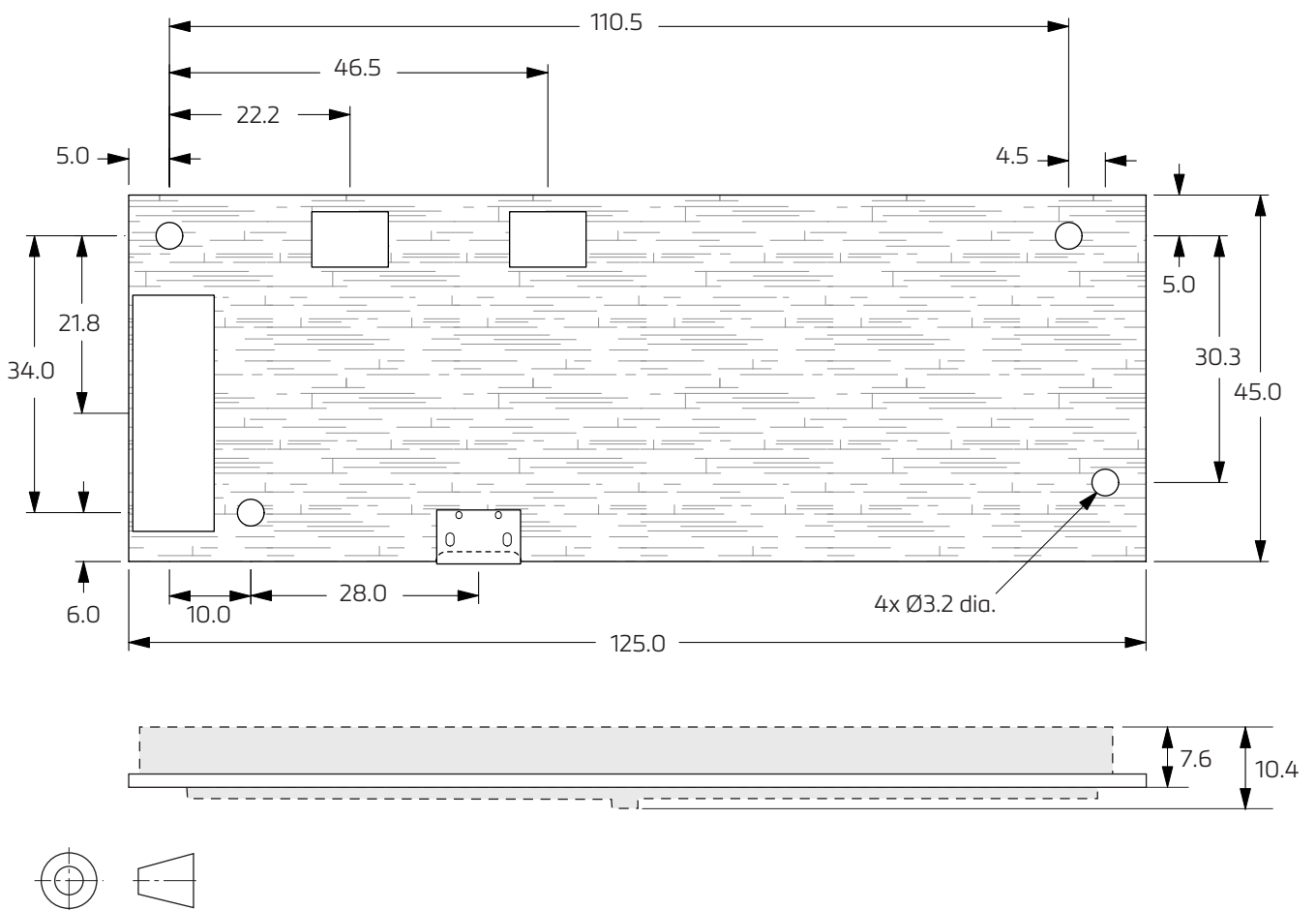
### general

Power Supply: TR2-A (5V)	4.5V to 5.5V @ 500mA (max)
Power Supply: TR2-B (10-24V)	9.5V to 28V @ 200mA (max)
Operating Temperature Range	-15°C to +55°C
Storage Temperature Range	-30°C to +85°C
Weight	30g approx.

### wiring



product dimensions (mm)



Dimensions and specifications are subject to change without notice.